

## CLAIMS

What is claimed is:

1. A method sending message between two or more network access points via  
5 a shared medium network, said network access points connecting a point-to-point  
network to said shared medium network, comprising:

receiving data packets from said point-to-point network at said network access  
points;

formatting said data packets in said network access points as a shared medium  
10 network data packet format; and

sending said data packets to said shared medium network from said network  
access points using an inter-network access point protocol (INAPP).

2. The method according to claim 1, wherein said shared medium network  
15 format includes a data field that contains an INAPP message.

3. The method according to claim 2, wherein only network access points can  
send and receive data packets containing said INAPP message.

20 4. The method according to claim 3, wherein said INAPP message includes an  
INAPP information message for informing said network access points of a new node  
connected to a service area of any said network access point, and an INAPP  
encapsulation message for sending encapsulated point-to-point network data packets  
to said network access points.

5. The method according to claim 4, further comprising receiving from said point-to-point network a registration message containing a MAC address of said new node at one of said network access points and sending an INAPP information message  
5 from said network access point receiving said registration message to said shared medium network, said INAPP information message containing information about said new node including said MAC address of said new node.

6. The method according to claim 5, further comprising receiving said INAPP  
10 information message from said shared medium network at another one of said network access points, storing said information about said new node in said other network access point, and using said stored information to prevent data packets addressed to said new node from being forwarded into a service area of said other network access point.

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7. The method according to claim 6, further comprising preventing data packets that originate in said other network access point's own service area that are addressed to said new node from being blocked by said other network access point.

20 8. The method according to claim 4, wherein said encapsulated point-to-point network data packets include route requests, route replies, and route failure messages to be forwarded to said point-to-point network.

9. The method according to claim 8, wherein said route requests include ARP route requests and non-ARP route requests, and said route replies include ARP route replies and non-ARP route replies.

5           10. A system for sending messages between two or more network access points via a shared medium network, said network access points connecting a point-to-point network to said shared medium network, comprising:

          means for receiving data packets from said point-to-point network at said network access points;

10           means for formatting said data packets in said network access points as a shared medium network data packet format; and

          means for sending said data packets to said shared medium network from said network access points using an inter-network access point protocol (INAPP).

15           11. The system according to claim 10, wherein said shared medium network format include a data field that contains an INAPP message.

          12. The system according to claim 11, wherein only network access points can send and receive data packets containing said INAPP message.

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          13. The system according to claim 12, wherein said INAPP message includes an INAPP information message for informing said network access points of a new node connected to a service area of any said network access point, and an INAPP

encapsulation message for sending encapsulated point-to-point network data packets to said network access points.

14. The system according to claim 13, wherein one of said network access  
5 points is further configured to receive from said point-to-point network a registration message containing a MAC address of a new node in another one of said network access points, and to send an INAPP information message to said shared medium network containing information about said new node including said MAC address of said new node.

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15. The system according to claim 14, wherein said other network access point is configured to receive said INAPP information message from said shared medium network, store said information about said new node, and use said stored information to prevent data packets addressed to said new node from being forwarded  
15 into a service area of said other network access point.

16. The system according to claim 15, wherein said other network access point is further configured to prevent data packets that originate in said other network access point's own service area that are addressed to said new node from being  
20 blocked.

17. The system according to claim 13, wherein said encapsulated data packets include route requests, route replies, and route failure messages to be forwarded to said point-to-point network.

18. The system according to claim 17, wherein said route requests include ARP route requests and non-ARP route requests, and said route replies include ARP route replies and non-ARP route replies.